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ABSTRACT

This fastback provides an overview of developmental education at the college level, focusing on what the concept means and how developmental education programs work. Developmental education is an umbrella term that includes both academic and social/psychological support services for underprepared students. Developmental education students are typically either: "poor choosers," in that they did not select a college-prep curriculum in high school; adult learners who return to school after a long absence; students with undetected academic or physical problems; non-native speakers of English; learning or physically disabled; or students who lack clear goals. Developmental programs typically include special remedial classes, a learning assistance center, tutoring, advising, and counseling. Review of the evaluation and effectiveness of developmental education programs finds that a number of studies indicate that developmental education programs are highly successful, and that students who go through these programs graduate from college at about the same rates as those judged to be better prepared. Four student vignettes are used to illustrate success stories among developmental education students. (Contains 14 references.) (MDM)

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Developmental Education at the College Level

Ann E. Miller

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Karen J. Miller has served for more than 25 years as an instructor of reading and writing for underprepared college students at the University of Toledo Community and Technical College, where she also teaches freshman composition. She regularly conducts workshops at state and national meetings on developmental education, as well as for such organizations as the International Reading Association, the American Association of Community and Junior Colleges, and the Freshman Year Experience. Miller is the author of several articles concerning the reading and study skills curriculum and contributed to a reference manual on assessing developmental preparation programs.

Miller has earned many individual honors, including a 1992 Award for Teaching Excellence from NISOD and the UT Women's Commission award as Outstanding Woman Administrator. While she was director of developmental education at the University of Toledo Community and Technical College, that program was awarded the National Association for Developmental Education's 1991 John Champaigne Memorial Award for Outstanding Program.

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Developmental Education at the College Level

by
Karen J. Miller

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The Stories of Four Students

Jill, an 18-year-old who graduated from an inner-city high school, applied to the local community college only because that is what her friends were doing and job opportunities were scarce. The day she received her acceptance, she thought there had been a mistake. She had graduated from high school with a D average in a general education curriculum. In her own words, Jill considered herself a "fraud." She knew that she was not "college material."

Placed into classes for the underprepared — including reading, writing, and mathematics — Jill quickly became convinced that her teachers expected her to succeed. That expectation motivated her. The faith her professors had in her encouraged her to take such steps as visiting faculty offices for personal help, working with tutors, participating in small self-help group discussions, and obtaining personal counseling — all to acquire academic skills and build self-esteem.

Rebecca, a student from suburbia, was a B-average graduate of a highly respected school. She had every ex-

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pectation to be successful in college in her chosen field, nursing. Certainly, she did not appear to be the sort of student who would need developmental classes.

While waiting for an opening in the nursing program, Rebecca decided to work on her general education requirements. She reasoned that she also could get the tough science classes out of the way prior to embarking on a clinical program. But much to Rebecca's dismay, placement test results indicated that she needed to enroll in the most basic writing and mathematics classes. At first, success came easily, no doubt because the initial writing class focused on basic sentence construction and the math seemed like a review to her. But later she encountered stumbling blocks. Miscommunication with her advisor resulted in her being enrolled in regular freshman composition.

It was clear to her freshman composition teacher that Rebecca did not know how to plan, organize, or develop an idea; she could not differentiate a topic from a supporting example. Rebecca claimed that she never had to write a paper during high school, that the entire English curriculum had been devoted to reading "great works." Despite her efforts, she earned a D in the writing class. Knowing that the D would not earn her a spot in the next year's nursing class, she asked her teacher for advice.

Her teacher found that Rebecca had been misplaced in the sequence of writing courses and recommended that she take the second developmental writing class, where she would learn to write well-developed paragraphs. After 30 hours of tutoring to supplement the

basic writing course, Rebecca not only passed that course but re-took freshman composition and earned a B.

Teo, a bright, Hispanic, nontraditional student, entered the university as an English-as-a-second-language student. He was determined to demonstrate to his family, including his wife and three teenage children, that hard work would pay dividends and that he could master the English language.

He began his college career by taking only developmental education classes and had little difficulty with them, except for basic writing. To tackle this area, Teo regularly sought help from faculty members and participated in individual tutoring in the writing lab. To sharpen his English skills, he also conversed regularly with a volunteer tutor in the university's learning assistance center.

After finding success in the developmental classes, Teo enrolled in the college composition course sequence, where he earned A's in both classes. Frequently, instructors used his papers as models of development; and he often collaborated with other students, helping them as they wrote their essays.

Marvin, an African American, was another nontraditional student, a divorced father of two and a parolee. Finding himself in a job with limited responsibilities, Marvin wanted to improve his prospects for finding a better job. He had to work nights in order to attend school and still be able to support his children. Sometimes he came to class only to fall asleep after working all night. But he never missed a class.

Developmental algebra and writing were solid experiences with success. He was surprised when his paragraphs were read in front of the class or placed in the opaque projector as models of good writing. With only occasional tutoring before a paper was due or prior to a math test, Marvin passed his developmental education classes the first term.

As a student who openly shared his personal problems and frustrations with his instructors, Marvin became well-acquainted with the instructional and advising staff. Through this openness, he connected with several mentors; and soon he began giving advice to younger, less-motivated students. It was clear early on that Marvin could serve as a role model to other minority students.

These four students are typical of the wide diversity of students who avail themselves of developmental education programs in institutions of higher education. And their successes are equally typical.

The purpose of this fastback is to provide an overview of developmental education at the college level: what the concept means and how most developmental education programs work. At the end of this fastback, I will come back to Jill, Rebecca, Teo, and Marvin, who are examples of developmental education in action.

What Is Developmental Education?

Parents, educators, politicians, the media, and others have succeeded in making the acquisition of a college education an ideal, certainly the most important goal for all but the least-talented young people. Most parents and students also see a college education as the key to future career success. Indeed, many employers who formerly hired high school graduates or individuals with two-year trade school or community college certificates have come to view an initial four-year college degree as basic to employment.

Couple this intense college orientation in American schooling — in American life in general — with the fact that about 80% of American colleges will accept any student who cares to apply for admission, regardless of the student's level of preparation for college work, and it is easy to see why many students come to college ill-prepared for the academic rigors they will face. Therefore, the problem of unprepared or poorly prepared students is a considerable cause for concern.

Fortunately, the response from most postsecondary institutions has been to recognize the increasing diversity of the students entering their schools and to accept that some of these students will arrive in need of additional preparation for college study. Students most likely to be in need of developmental education are nontraditional students, such as students who can afford to study only part time and older students, many with families for which they are responsible; traditional high school graduates with little or no college preparation, often graduates in the lower half of their class; and students with physical and learning disabilities.

Developmental education is an umbrella term that includes both academic and social/psychological (sometimes called "student affairs") support services. While offering special courses to students who need academic support is not new, the massive curriculum devoted to such courses and the human support given to such students through tutoring and counseling is fairly recent and becoming pervasive in our system of higher education. For example, according to the National Center for Education Statistics (1991), 74% of all higher education institutions offered at least one course designed to help the underprepared student, and 30% of all college freshmen took at least one developmental course in the fall of 1989.

In the past, coursework for underprepared students was called *remedial*, a term taken from the medical field with the implication that something in the student needed fixing. Another term previously used was *compensatory education*, implying that environmental defi-

ciencies in the student's background needed to be "compensated" for by providing enriching experiences in school. More recently, college student personnel professionals have combined academic and student affairs support for student learning under the more positive, comprehensive term, *developmental education*.

Developmental theory suggests that the students can practice and ultimately master increasingly complex academic and personal tasks. Over time, student growth occurs and the student becomes independent. Maxwell (1995) writes, "The claim is that developmental students need to learn skills they have not previously been taught in high school and that the fault is not with their ability, but with their preparation" (p. v). Thus developmental theory has influenced the label given to such activities and how the activities are structured. It also has influenced the students who participate in these activities.

Another term often applied to developmental education programs is *learning assistance*. This term is used because it points up the supplemental services that most comprehensive developmental education programs provide, such as tutoring, other supplemental instruction, workshops, or counseling.

The term *developmental education* has been adopted by the National Association for Developmental Education (NADE). And the American Association of Community and Junior Colleges (AACJC) published a comprehensive definition of developmental education in the late 1980s. Though intended for two-year schools, it suggests essential program components, saying, in part, that programs for developmental education are:

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> programs that teach academically underprepared students the skills they need to be more successful learners. The term includes, but is not limited to, remedial courses. . . . Effective developmental education programs provide educational experiences appropriate to each student's level of ability, ensure standards of academic excellence, and build the academic and personal skills necessary to succeed in subsequent courses or on the job. Developmental programs are comprehensive in that they access and address the variables necessary at each level of the learning continuum. They employ basic skill courses, learning assistance centers, supplemental instruction, paired courses and counseling services. (AACJC 1989, p. 115)

Rubin's (1991) glossary definition, used by both the National Association for Developmental Education and the College Reading and Learning Association, connotes institutional and professional roles as well as expected student outcomes:

> 1: a sub-discipline of the field of education concerned with improving the performance of students. 2: a field of research, teaching, and practice designed to improve academic performance. 3: a process utilizing principles of developmental theory to facilitate learning. (p. 5)

Developmental education students, then, should be those who have potential for success in their chosen field of study if appropriate educational opportunities and interventions are provided. Given the current emphasis in American society and schooling that is placed on obtaining a college education, it is not difficult to

suggest that developmental education is likely to continue to demand increasing attention and resources for the foreseeable future.

Who Are Developmental Education Students?

In 1988 the Exxon Education Foundation commissioned and funded the National Study of Developmental Education, which was conducted by the National Center for Developmental Education over a three-year period. Perhaps the most striking conclusion of the National Study of Developmental Education is that "there is really no such thing as the 'typical' developmental student" (Boylan et al. 1994*b*). Diversity is the most common trait among these students, and much of this diversity has been the result of societal changes. For example, changes in technology have created a need for many individuals to further their education beyond high school. Rising expectations of employers make participation in higher education desirable for many, including members of under-represented groups, such as minorities, women, non-native-English speakers, and the economically and academically disadvantaged.

Although no single profile fits the developmental education student, it is possible to describe demographically the typical participants in such programs. While

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the majority are recent high school graduates, it is clear that the average age of developmental students is rising, as is the average age of students at most institutions of higher education. The number of adults returning to school increases each year, with slightly more female than male developmental education students. As might be expected, a sizable number of developmental students are married and attend college part time.

Although the majority of developmental students are white, a significant proportion are African American. The National Study found that the proportion of African-American students is about 23% at two-year schools and 30% at four-year institutions.

The National Study reports that only 7% of underprepared students had been conditionally admitted to two-year institutions, while the percentage was far higher (43%) in the four-year school. The difference is attributable to the standards for admission, with the majority of two-year institutions being open-admission schools with a primary mission to meet the needs of the underprepared learner.

However, demographic generalizations of developmental education students fail to provide a clear picture of those students. Hardin (1988) has provided a descriptive, rather than statistical, profile of developmental education students, who most often share one or more of the following characteristics:

- They are "poor choosers" in that they did not select a college-prep curriculum while in high school. Abraham (in Hardin 1988) reports that only one-

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third of today's high school students are enrolled in a college preparatory curriculum. These poor choosers may be high school dropouts or students who simply had no intention of attending college. Regardless, they come to postsecondary institutions not prepared to do college-level work.

- They are adult learners who return to school after a long absence; these students need to review academic material they have rarely used during their adult lives (such as solving algebraic equations), re-learn something they learned poorly (such as writing topic sentences), or learn a new skill (such as keyboarding).
- These students may have undetected academic or physical problems, such as not knowing how to use a dictionary or having poor eyesight.
- These students may have come from another country to study and need individual help with the English language, although they often are quite capable in math and science.
- They may have a physical or learning disability; these students require enormous amounts of attention from faculty members, advisors, and tutors. Often they are mistakenly viewed as lazy or lacking motivation.
- They may lack clear goals but still use the higher education system to their advantage. For example, the students may attend college to receive financial aid, to avoid going into the job market, to play sports, or to gain the prestige associated with attending college. Hardin calls these students "users."

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These characteristics can be seen in students every day by those who work in the field of developmental education. The needs of students are many, depending on their preparation, their family background, their personal motivation, their previous decisions, and their personal characteristics.

Identifying Underprepared Students

Effective identification is criterion-referenced rather than norm-referenced. Underprepared students are identified according to criteria determined by each institution, such as admissions standards, prognosis for success, or individual course standards. Students who are admitted to a highly selective school and are found to be inadequately prepared for a calculus class are not likely to be identified as underprepared in an open-enrollment community college. The most common criteria are high school grade point averages, SAT and ACT scores, and other placement test scores.

Four-year institutions commonly use placement test scores more than other assessments, while two-year institutions are more likely to use a variety of assessment measures. While many factors enter into identification of developmental education students, most institutions put special emphasis on placement testing. It is one of the factors over which they can maintain control, selecting assessments that match their philosophy, curriculum, available technology, or degree programs. For example, reading programs that are skill-based may choose a standardized instrument, such as the Nelson-

Denny Reading Test, which focuses on vocabulary, speed, and comprehension of main ideas. A program whose philosophy is based on processing text and using reading strategies might choose a reading test that matches that philosophy, such as Degrees of Reading Power.

A school with available technology might use computerized placement tests, which make use of sophisticated branching questions. These types of assessments allow students to start responding at a level where they can be successful, but they are stopped before reaching a frustration level.

Many schools also develop their own tests. These tests often have the distinct advantage of closely matching the curriculum and so have high content validity. However, they may not be as reliable as standardized measures.

Underprepared students also are identified by referrals. They may be referred through the admissions interview process or by an academic counselor after admission. Self-referrals also are possible, when students realize that they need assurance or are having academic difficulties that cannot be solved simply by "studying harder."

Roueche and Roueche (1994) argue effectively for both mandatory assessment and course placement. Those students who need the most assistance likely might avoid both the testing and the coursework if they were not required. Programs identified as models by the National Association for Developmental Education, as well as by Roueche and Roueche (1994), most frequently have both mandatory assessment and placement.

The National Study of Developmental Education (Boylan et al. 1994*a*) found that while 91% of four-year

schools mandated some types of assessment, only 68% of two-year schools required that students' skills be assessed. Among the latter schools, just 35% actually required that students enroll in the courses identified as needed through the evaluation. Boylan and his colleagues conclude that "for most 2-year institutions, participation in developmental courses is voluntary." However, two-thirds of the four-year institutions mandated that students enroll in the courses indicated by their assessments.

In recent years, several states have initiated a mandatory assessment program for students entering their institutions of higher education. These include Tennessee, New Jersey, and Texas.

Many institutions, determined to maintain high standards and enhance their students' opportunities for success, take the requirement a step further and mandate successful completion of prerequisite courses. While that seems to make sense to professional educators, students often have demanded to enroll in whatever course they choose and, unfortunately, institutions of higher education often are so financially strapped that they cannot afford a good program of checks and balances to prevent abuse of the system. Also, students often are encouraged to preregister weeks before a term ends, before they know whether they will pass the current course, which further confounds any scheme of checks and balances.

Furthermore, with advanced computer registration systems, students often register for a new term without any human intervention. Thus the opportunity for advisor intervention is diminished. Clearly, mandated

assessment, placement, and prerequisites will be most meaningful when audit systems are in place to ensure that developmental education students do not "slip through the cracks" in the system.

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Program Components

Research suggests that student success is enhanced when an array of services are provided to underprepared students (Boylan et al. 1994*a*). Although classes contribute to an individual's academic growth, tutoring, advising, and counseling services increase the probability of success by focusing on the affective as well as the cognitive. Following are components that the most effective developmental education programs include.

Coursework

Hunter Boylan and his colleagues (1994*a*) report that 93% of institutions with a developmental program offer one or more developmental courses to underprepared students, with just slightly more two-year colleges offering this classroom instruction than four-year schools. The most common course for less-than-college-level work is a reading course. Developmental courses in math are becoming more numerous because students, especially at two-year colleges, have not taken college-prep mathematics during their high school years. Along with reading and math courses are carefully designed writing courses, often more than one preparatory course

prior to freshman composition. Also common are courses in study skills that focus on note-taking, test preparation, time management, and other essential tools for being a student.

Reading. Reading has been transformed in recent years from individualized instruction based on diagnosis and prescription to an emphasis on metacognition and textbook strategies appropriate for selected purposes and content. Based on the principles of cognitive psychology, this change has created more student involvement and more direct application of reading strategies to coursework. The most successful reading curricula provide instruction and both guided and independent practice in annotating, paraphrasing, summarizing, comparison charting, and semantic or concept mapping — all the while using students' actual textbooks. Often the reading course is linked to a required general education course, such as sociology or psychology. This creates a meaningful context in which to teach the reading strategies.

Also important to reading improvement is the expansion of students' knowledge base, as underprepared students often are unaware of current events, political agendas, and social issues. Exposure to ideas is best accomplished by regular, critical reading of such periodicals as *Newsweek* or *Time*.

Recent research also suggests that writing summaries improves comprehension and retention of reading materials. The K-12 writing-to-learn movement applies equally to the college reading classroom. Students who learn to analyze, summarize, and explain complex concepts in writing enhance their reading comprehension.

Mathematics. Classes in which the content ranges from basic arithmetic through intermediate algebra are labeled "developmental." A few institutions consider any math below calculus to be part of the developmental education program, with the determining factor being the transferability of the course. However, those classes that readily transfer to another institution and apply toward graduation are not viewed as developmental.

Special math classes often are designed for those who need basic computational skills or for those going into business careers or science careers; some math classes enroll only future nurses, focusing on dosages and percents, or they are targeted to future engineers. Thus the developmental math curriculum has become quite defined, especially in the community college.

Likewise, time frames for those math classes vary considerably in order to meet students' needs. For instance, students who have never taken high school algebra are no longer expected to master algebraic concepts in a fast-paced, 10-week quarter, or even in a semester; but those students who have been introduced to algebra previously, perhaps long ago or unsuccessfully, are placed in a faster paced algebra class.

The typical structure of the developmental math curriculum parallels that of the secondary schools, with courses built around a discreet set of skills, such as basic arithmetic, elementary or intermediate algebra, geometry, or consumer math. Students move from one class to the next, advancing as far as their intended programs of study require. As the structure of developmental math most often corresponds to the high school cur-

riculum, so do the teaching methods, with a sequence of instruction, guided and independent problem solving, and testing.

However, in recent years many calls for a reformed curriculum have been issued by professional organizations, such as the American Mathematical Association of Two-Year Colleges (AMATYC), the National Association for Developmental Education (NADE), and the Mathematical Association of America (MAA). These calls for reform focus on content, methodology, pace, and emphasis. While recognizing the need for some computational skill, the reformers emphasize the importance of learning to reason mathematically. Included in the new curriculum design are such technologies as the use of graphic calculators and computers, more multistep problem solving, the use of manipulatives, and the encouragement of study groups and pairs or triads to promote collaboration and peer tutoring, both in and out of the classroom.

Writing in mathematics classes also is a part of the reform movement. Because writing is directly related to a learner's ways of comprehending, written expression encourages students to think about their own ways of understanding. Thus the written response provides an important means of monitoring comprehension for both the learner and the teacher. Writing is a means of converting the unfamiliar language of mathematics into more familiar written language, and so it has become an additional tool for instructors of developmental mathematics.

Writing. In English, the most frequently offered developmental class is the old "bonehead" English, a re-

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view of grammar and basic writing principles related to paragraph development. Also common is a series of one- or two-credit classes related to writing mechanics, spelling, or sentence construction. Many colleges divide their developmental writing curriculum into one class dealing with sentence structure followed by another that concentrates on paragraph development.

All of these classes usually are supplemented by tutoring and computer-assisted instruction. For instance, tutors may work in the classroom along with the instructor to improve the teacher-student ratio, or students may obtain tutoring support at a centralized facility. Students may work with computer programs that help them generate ideas as they prepare to write or that give them feedback about grammar, spelling, or word usage after they have produced a draft.

Model developmental education programs suggest that several factors are critical to the improvement of students' writing. The first is a shared philosophy of writing instruction. Most often, instruction focuses on a process approach rather than the product approach of the 1960s and 1970s. The earlier method of instruction emphasized the finished paper and the importance of mechanical correctness. The process approach, on the other hand, suggests that how students think about writing and how they approach the process of developing their ideas are key to the success of the written paper. Teachers using process methods take students through the prewriting, drafting, revising, and editing stages of a piece of writing, with considerable feedback along the way.

Another essential factor in the developmental writing classroom is the reading connection. Often from multicultural materials, students read, discuss, and learn to analyze and evaluate what they are reading. Research reveals the close connection between reading and writing: The best writers are skilled readers. Therefore, effective writing teachers proceed from the premise that one way to improve writing is to read regularly and critically.

Collaboration and cooperative learning also are very much a part of the writing classroom, with students generating ideas and responding to peers on a regular basis.

Study Skills. Though often integrated into the reading class, many developmental education curricula isolate study skills in a separate class. Focus is given to traditional "non-reading" study skills, such as note-taking, test preparation, and time management. Because research suggests that those students who have long-term goals are retained at a higher rate than those who do not have such goals, in recent years there has been an emphasis on career exploration and setting goals. Career readings or the college catalogue provide the content for discussion and assignments.

Sometimes study skills classes also are linked to required general education classes. And in quite a few colleges, study skills topics have been incorporated into a required class for all students, not just for the underprepared. A widely used model is from the University of South Carolina, called *The Freshmen Year Experience*, by John N. Gardner.

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Other Classes. Although reading, math, writing, and study skills classes are the most common offerings, several other preparatory classes may be considered developmental by their institutions because no transfer credit is granted and the work is not at the college level. For example, introductory classes in drafting or in biology and chemistry for the student who has never taken parallel high school classes are available. Sometimes departments offer an orientation to careers in their fields and call the class "developmental."

Coursework lies at the heart of the developmental education program. Sometimes it is the only program component; almost always it is the most common component. Classes designed below college level (in other words, at the high school or college-prep level) are essential for some students to succeed in postsecondary institutions. Without them, many colleges would be simply revolving doors.

However, while developmental education classes may be the most traditional response to the needs of underprepared students, such coursework certainly is not the only means of assisting students. Also important are many different kinds of individual assistance, usually coordinated by some sort of learning assistance center.

Learning Assistance Center

The popular term, *learning assistance center*, was coined by Frank Christ at California State University-Long Beach in the early 1970s and aptly suggests the purpose of this facility, which usually consists of a large com-

mon space or a series of designated rooms. The LAC, as it is commonly called, is designed to meet the individual academic needs of students, bringing together individual or small-group tutorials and technology.

Normally, support services in the LAC are not limited to a special group of students, such as the underprepared. Instead, most LACs serve the needs of all students. In fact, the first LAC at Long Beach was designed to assist not only students but a variety of constituents, including faculty and advisors.

The idea behind the LAC concept is that any individual can learn to become an effective student. At various times, LACs have included study skills classes, remedial reading laboratories, integration of personal adjustment to college life, programmed instruction and visual aids, and the systems approach to individualized instruction that obtains user feedback as part of the evaluation and improvement loop (Enright 1995).

Career counseling is another responsibility accepted by many LACs. In addition, LAC personnel often take on the role of student advocate, all the while supporting the faculty and curriculum. For example, a tutor may speak to an instructor on behalf of a learning disabled student, seeking clarification of an assignment; a supplemental instruction leader may meet weekly with a classroom instructor to seek advice on how to explain old concepts in new ways to a group of students he is tutoring; a retiree volunteer who spends hours each week in conversation with international students may wish to share a concern about an over-anxious ESL student with that student's instructor. Writing tutors have been known

to work directly with graduate students' advisors in order to enhance student writing. In many ways, for some students the learning assistance center becomes the learning hub of the entire academic community.

Model learning assistance centers are comprehensive, offering both individual and small-group tutoring, supplemental instruction (SI), group study tables, and seminars and workshops. Many LACs have extended from this model, of course, and provide support programs for special populations, such as athletes or nursing students. Over the years, many institutions have added other functions, such as GRE preparation or seminars in campus residences or Greek housing. No single form is best. However, the following are basic elements.

Tutoring. Tutoring takes many forms: individual or small group, professional or peer, diagnostic identification of problems or help with an assignment, computer-assisted instruction or communication with a professor through technology, formal workshops or informal conversational groups. Whatever helps students to develop cognitively or affectively, if it is not in the classroom or in a faculty office, usually can be found in a learning assistance center.

Tutoring may be limited to academic areas, such as writing and math — these are the most common — or tutoring may be available in any field for which the student seeks assistance. In the limited tutoring facility, professional tutors, often part-time instructors or faculty who schedule office hours there, are engaged to help the students with assignments. In larger operations,

many professional tutors from various backgrounds are employed. Peer tutors, who either major in one of the selected academic areas or have passed the course with high grades and are recommended by professors, also are trained to assist students with their assignments. This latter form of assistance is more common in four-year institutions, where senior students are readily available.

If money is in tight supply, as is often the case for developmental programs, volunteer tutors are sought. These may be retired K-12 or college teachers. Retirees in fields such as business or engineering not only tutor but also serve as positive role models and informal career advisors.

To be effective, tutors need to be trained. Effective training incorporates instructional philosophy, policies and procedures, and communication and study strategies. A comprehensive training program, the "National Tutor Certification Program," was developed in 1988 by the College Reading and Learning Association (CRLA) and now is endorsed by the National Association for Developmental Education and the American College Personnel Association. This program requires that individual institutions submit documentation of their tutor training programs. The institutional programs are then "certified" as having appropriate training for tutors. This process has provided a degree of professionalism for learning centers.

Supplemental Instruction. One variation of tutoring is known as Supplemental Instruction (SI), a program de-

veloped at the University of Missouri-Kansas City. Today it is widely replicated as a model of academic support. SI calls for a student who has successfully completed a required course, such as Introduction to Psychology, to serve as a model student in that course and concurrently conduct group study sessions for students. Thus the SI leader, as the student is called, attends class, takes notes, asks questions, and prepares for class and exams as would a regularly enrolled student. He or she then schedules two to three group study sessions each week at times agreeable to the students enrolled in the course. During an SI group session, the leader serves as a resource, answering questions, asking questions of students, reviewing notes, helping students predict test questions, clarifying concepts, demonstrating how to read the text or annotate ideas in the text, drawing sketches, or otherwise enhancing students' understanding of the course material.

As with traditional tutoring, training and supervision of SI leaders is very important. Data collected at more than 300 institutions offering SI programs reveal that both course grades and subsequent term retention are enhanced for students who participate in SI. Blanc and her colleagues (1983) have offered several reasons for the program's success: its proactive focus, its attachment directly to specific courses, the in-class presence of the leader, its image as a help to all students (not just underprepared), and the support systems that develop as a result of participating in SI.

Group Study Tables. Many adaptations of SI have been made over the years, the most common being the group

study table. A group study table may be initiated by the learning assistance center and may be led by an instructor or a student. Or a study table may be wholly student initiated. In either case, motivation and leadership are keys to success.

Group study tables appear to be most effective when considerable memorization or problem solving is essential to success in the course. Anatomy and physiology, biology, and medical terminology students profit from shared study. They quiz each other on material and find mnemonic devices to aid in retention. Drawing sketches or creating timelines are typical strategies that groups of students employ when working together. Self-starter groups are particularly adept at helping one another understand how to solve math problems.

Seminars and Workshops. A final major function of most learning assistance centers is to provide topical workshops to general or targeted populations. For example, time-management or test-preparation workshops draw students from a variety of academic areas. Promoted and conducted effectively, such workshops not only serve students well but also enhance the image and credibility of the LAC.

In some cases, a general workshop that is well-received will lead to invitations from faculty members for LAC staff to conduct specifically focused workshops. For example, science or medical faculty members may ask the LAC to structure workshops on how to read a respiratory care text, how to use concept cards in anatomy and physiology, or how to identify and organize ideas for a term paper in a social service class.

The learning assistance center in most colleges has become an essential component of the developmental education program, extending and enhancing the coursework component. However, a third component also is critically important: advising.

Advising

As common as coursework and the learning assistance center is the use of advising and counseling specifically designed for the developmental education student.

According to a national study of developmental education programs (Boylan et al. 1994*a*), 73% of four-year institutions and 69% of two-year institutions provided advising and counseling services for their developmental education students. Professional advisors or counselors were employed most often in the two-year schools, while peer or paraprofessional advisors were more often used in four-year schools.

The principal task of an academic advisor is to aid students with course selection and scheduling. For the developmental education advisor the work may also include interpreting placement-test results and explaining recommended and required classes.

Traditional counseling functions also are important for underprepared students, because these individuals often have personal and academic problems to overcome before they can be successful as students. Many nontraditional and underprepared students have difficulty adjusting to college life, juggling conflicting job and class schedules, handling financial aid concerns,

dealing with family problems, or coping with a host of other challenges. An advisor/counselor typically works with students to overcome these challenges.

As necessary as these functions are, perhaps even more critical is the contact function. Regular contacts between advisor and student let the student know that someone at the institution cares whether he or she succeeds. This contact may be a phone call, an E-mail message, or an informal meeting over lunch or a snack in the student union. Such contacts can stop some problems before they become insurmountable, such as absenteeism, lack of effort, late or incomplete assignments, or apparent lack of certain study skills. In many cases, advisors serve as informal mentors and models; sometimes they also serve as advocates, meeting with faculty members on behalf of students who are experiencing academic difficulties or who are going through a personal crisis.

Sometimes advisors assume an instructional role by offering workshops related to life skills, study skills, or career skills. These workshops might include how to communicate with a welfare office or with a classroom instructor, how to prepare for exams or overcome math anxiety, or how to prepare for a job interview. Proactive measures frequently include special workshops or study skills classes for probationary students.

The developmental education adviser must be viewed as an integral part of both the developmental education program and the institution's central advising staff. Sometimes advisors are located in the learning assistance center; in other situations advisors are attached to

specific departments. In either configuration, the advisory function is an important component in the developmental education program.

Community Services

While colleges and universities have always prided themselves on services to the communities in which they reside, the expansion of developmental education programs into business and industry is a fairly recent phenomenon.

What were acceptable basic skills 10 or 20 years ago are not sufficient in today's workplace. Workers not only must read, write, and compute, but they also must know how to make decisions, participate in teams, solve production problems, make recommendations regarding effective management, and demonstrate skills in using technology. Above all, the worker must know how to learn.

Postsecondary institutions are in a unique position to serve the business and industrial community by responding to their training needs. A League for Innovation study found that 96% of community colleges offered such training opportunities, including customized services to meet specific needs (Doucette 1993). An institution may conduct a needs assessment to determine general business needs. Another way developmental educators become involved in community service is by conducting a literacy audit, a sophisticated survey to identify the specific competencies needed for a specific job. Or an LAC can develop an education program on

request that meets a discrete objective, such as learning fractions and percents in order to be able to mix the proper paint colors in an automobile factory.

In addition to working directly with businesses and their training needs, professionals in developmental education often meet other needs within the community. General educational development (GED) programs have become regular components of some developmental education programs, primarily in community colleges and in mid-size and smaller communities where no other institution is available to meet the needs of the adult learners. Colleges host GED programs on campus as well as at community sites.

Options for Program Organization

Over the years, several organizational patterns for administering a developmental education program have emerged. One option is to maintain the program as an independent academic unit, such as a department or division. Another option is to incorporate the program into an existing department or set of departments. A third option is to attach the developmental education program to the overall student affairs operation.

Since developmental education programs have their roots in remedial coursework for the underprepared student, creating a special academic unit or embedding such a unit within another department are the most common administrative structures. Approximately 80% of programs are administered in this manner. Half of these are departments of developmental studies or de-

velopmental education. The others function within English and math departments, or they are an integral part of a general studies/arts and sciences unit. The majority of the program leaders report to either an academic vice president (the usual title in a four-year school) or a dean for instruction (in a two-year school). This direct connection to the academic function points up the essential instructional nature of the developmental education program.

The importance of advising and counseling components is more evident when a developmental education program is placed under the student affairs umbrella. Clearly, such a relationship grows out of the concern for holistic student development, which emphasizes the importance of providing counseling and career direction to the undecided, underprepared student. This student affairs relationship also has roots in the TRIO programs, the compensatory programs of Upward Bound, Student Support Services, and Talent Search. Student affairs personnel often have broad experience with these programs and so are well-positioned to administer developmental education programs. Furthermore, on many campuses the division of student affairs is the unit that initiates the learning assistance center and therefore has a natural connection to the entire developmental education program.

Various combinations of these three types of organization also exist. Sometimes elements from several academic departments and student services are combined to make a developmental education program. Such is the case when the curricula of math, English, and study

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skills are combined and identified faculty from various departments provide advice and instruction within the context of a learning assistance center. The success of this type of organization depends on effective leadership that coordinates all the elements and makes the program function cohesively.

Combination programs usually are designed to fit the specific needs of a given institution. For example, one noted community college program combines nine classes from two departments, a learning assistance center, special advising, and community outreach functions into a program with a director of developmental education leading the effort. A unique aspect of this program is that the program's faculty members retain their academic rank within their respective departments, and indeed report directly to academic chairs, and yet they choose to teach developmental courses. Research and program data are collected by the director of developmental education, and important decisions are taken to an advisory committee or made through communication with the various individual departments.

Some institutions operate a developmental program that is administered by the learning center and called simply a learning assistance program. In this case, the classes are offered by LAC personnel rather than department faculty. This organization is used most often when such classes are voluntary and not for credit.

Evaluating the Developmental Education Program

Evaluation is essential in order to determine a program's worth, and evaluation is especially important for developmental education programs, because in many cases they have been viewed with some skepticism. Critics question whether such programs work, first of all; and if they work, are they worth the money, time, and effort needed for success?

Rather than constantly defending against criticism, institutions and developmental education programs need to be proactive in terms of evaluating program success and addressing program shortcomings. Evaluation can best be accomplished using three means: self-assessment, formative evaluation, and summative evaluation.

While accountability is a reason for evaluation, it should not be the primary reason. Perhaps a better reason is self-improvement. And the self-improvement process begins with *self-assessment*. The National Association for Developmental Education recently endorsed a comprehensive handbook for assessing the

quality of essential program components, titled *Self-Evaluation Guides: Models for Assessing Learning Assistance/ Developmental Education Programs* (Thayer 1995). The focus of these guides is on identifying strengths and weaknesses in various program components. Evaluation formats are included for tutoring services, adjunct instructional programs, developmental coursework, and the general teaching/learning process. This document provides tools that will enable developmental education supervisors to collect meaningful information. However, the guides cannot be used to measure instructional outcomes. That function is best accomplished through formative and summative evaluation.

Formative evaluation, which should be quick and relatively easy to do, is designed to be helpful to improving specific program components. In formative evaluation, case studies, observations by students and faculty, and comparisons of instructional methods are important. For example, the formative evaluation might focus on studies of two methods of instruction such as lecture and small-group collaboration, comparisons of the success of marginal students who participate in the developmental program versus those who choose not to participate, comparisons of two forms of student assessment according to their accuracy in predicting future academic success, comparisons of different types of tutor training programs, and so on.

Summative evaluation, which should address the effectiveness of a program according to its long- or short-

term objectives, also is important for the future refinement of the developmental education program. Summative evaluation is designed to be more extensive and complete than formative evaluation and usually is undertaken at a natural breakpoint, such as the end of an academic year or the conclusion of a funding period.

Various formal measures are used for summative evaluation. Pre- and post-test types of measures can provide indications of the effectiveness of certain aspects of the developmental program, such as the reading or math curriculum. However, pre- and post-measures can be misleading if learning gains are credited only to specific instruction. Some gains may be more accurately attributed simply to student maturation, changes in attitude, other classwork, or some unknown reason.

Another common measure is student grades. If the developmental education program is successful, then the students also should be successful in earning passing marks in their classes. This measure often is used because it is relatively easy to track student success in related classes after the developmental education experience. For example, researchers may follow the grades of students who completed developmental reading to see whether they were successful in subsequent reading-based classes, such as sociology or psychology.

Retention rates supply yet another means for evaluating program effectiveness. Students who are successful are more likely to continue college work. Likewise, successful completion of national board exams, such as in nursing or engineering, provides another indicator of success. The best evaluations of developmental edu-

cation programs are multidimensional, using a combination of the above forms of assessment.

Some institutions may be able to add follow-up studies of their graduates to these other forms of assessment. Accrediting agencies, such as the North Central Association for Colleges and Secondary Schools, are promoting the idea of obtaining employer feedback. This idea certainly can be applied to developmental education programs. It is worthwhile to seek information about the level of preparation to perform particular tasks, such as writing a report or demonstrating interpersonal relation skills. However, this type of evaluation requires long-term tracking, considerable human effort, and meaningful institutional planning. Therefore, such follow-up, or post-graduation tracking, should not be undertaken lightly.

How Effective Are Developmental Education Programs?

Using some of the previous measures, a number of studies have found that developmental education programs in general are highly successful. Historically, short-term retention and GPA have been improved for those students who participate in such programs. Recent data from the National Study for Developmental Education (conducted by the National Center for Developmental Education) suggest that students identified as underprepared when they entered college persisted and graduated at about the same rate as those judged to be better prepared.

The persistence and graduation rates of developmental education students ranged from a low of 24% at community colleges to a high of 48% at research universities. That range is to be expected, given the open admissions policies of most community colleges. Approximately 45% of college students graduate from four-year institutions, and so developmental students compare very favorably at that level. For two-year institutions, students enrolled in technical colleges graduate at a 33% rate, compared to those from community colleges, who graduate at a 24% rate (Boylan and Bonham 1992). Again, the graduation rate of developmental education students at these types of institutions compares favorably.

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Organizations and Publications for Developmental Educators

While the concept of developmental education is certainly not new, the notion of a profession of developmental educators is fairly recent. The first professional organization for developmental educators, the Western College Reading Association, was formed in 1967 by professionals teaching reading and study skills courses. Today, with a much broader membership, this association is known as the College Reading and Learning Association (CRLA), which can be reached at Kwantlen University College, 8771 Lansdowne Rd., Richmond, BC, Canada V6X 3V8; (604) 599-2706, ext. 9521.

The College Reading and Learning Association publishes the *Journal of College Reading and Learning*.

The National Association for Remedial/Developmental Studies in Postsecondary Education held its first

conference in 1977. In 1984 the name of the organization was changed to the National Association for Developmental Education (NADE). Affiliates soon followed. Today that organization has 2,700 members, with 31 state or regional organizations (Boylan 1995). An annual conference brings professionals in the field together for four days each spring. Special interest groups are formed to look at content area teaching, counseling, advising, computers, evaluation, and administration, among other topics. In recent years special workshops for such areas as science education and workplace literacy have been conducted.

NADE provides many services to its members. Among these are an annual topical monograph, a journal devoted to the profession, and a quarterly newsletter giving updates on publications, conferences, and organizational happenings. Job placement services and political action networks are active. NADE can be contacted at P.O. Box 5922, Carol Stream, IL 60197-5922; (800) 942-9304.

The National Center for Developmental Education at Appalachian State University is well-known for its publications and research related to the field of developmental education. It provides such services as phone information and research data, publishes the widely respected *Journal of Developmental Education* and *Research in Developmental Education*, and offers consultant and speaking services. In addition, the renowned Kellogg Institute is held each summer at Appalachian State University. This intensive four-week program provides training and certification of developmental educators. The National Center for Developmental Education is lo-

cated at Appalachian State University, Boone, NC 28608; (704) 262-3057.

Graduate programs in developmental education are few. Appalachian State University offers both master's and education specialist degrees in higher education with focus on developmental education. National-Louis University offers a master's degree in adult education in developmental studies. Southwest Texas State University at San Marcos recently initiated a graduate program in developmental education. Grambling State University is the only institution that offers a doctorate in developmental education.

Other organizations also give credibility to the field of developmental education. These include Commission XIV of the American College Personnel Association, a task force devoted to the promotion of learning assistance programs. The New York College Learning Skills Association publishes *Research and Teaching in Developmental Education*. The Ohio Association for Developmental Education recently initiated a publication called the *Journal of Teaching and Learning*. These refereed journals and others are well-respected and provide a resource for the professional growth of developmental educators.

About Those Four Students

Remember the four developmental education students described in the opening pages of this fastback? Here is the rest of their stories as of press time.

Jill, the girl who described herself as a "fraud," went on to earn not only her associate degree but also a bachelor's degree. After working for several years, Jill married and had two children. As she reared her children at home, she was active in community service and earned on her master's degree in guidance and counseling, focusing on students in higher education. Today, Jill is a successful director of placement services in the same community college she entered as a "fraud." With her children in school, she is now working on her doctorate in student personnel. Recently, both the local college and a national organization awarded her alumna of the year awards. No one could be more worthy.

Rebecca, the would-be nurse, recently was admitted to the nursing program; and her instructors report that she is doing well. However, her respectable 2.8 GPA was acquired with some struggle. When she received a low grade in a general education class, she re-enrolled and

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repeated it, earning a higher grade. A benefit gained while awaiting entry to the clinical program is that Rebecca accumulated nearly enough credits for an associate degree in gerontology, a social service field close to her interests, which may earn her a promotion in the nursing home where she is a part-time aide.

Teo, the Hispanic, nontraditional student, also is still in school, working toward a bachelor's degree in a field related to the environment. While earning an associate degree in chemical technology, Teo was inducted into Phi Theta Kappa, the honor society for two-year college students, and earned several scholarships that have enabled him to continue his education. Teo also is recognized as a valuable volunteer mentor and tutor for Hispanic students. He knows that if he can "do it," so can they.

Marvin, the African-American, nontraditional student, also continues to make progress toward an engineering technology degree as a part-time student. Although he had to review high school algebra in a developmental class, Marvin then completed the math sequence through advanced calculus. Today, he tutors math students and serves as a volunteer mentor to several minority students. The faculty and staff have every expectation that Marvin will continue his charted path to becoming an engineer as he continues to attend college on a part-time basis. Marvin now has a better job with higher pay, better hours, and greater responsibility. He was told by his new employer that his continuing education was a major factor in his obtaining the job, despite his past history.

Higher education in general, and developmental education in particular, seems to have helped these students gain determination and motivation in addition to necessary skills. These characteristics are important to success in any endeavor, but they are especially important for developmental education students. Not all developmental students are as successful as these four; but if institutions of higher education can provide the resources to aid even a handful of underprepared students, then the effort and cost are worth it.

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Phi Delta Kappa Educational Foundation

The Phi Delta Kappa Educational Foundation was established on 13 October 1966 with the signing, by Dr. George H. Reavis, of the irrevocable trust agreement creating the Phi Delta Kappa Educational Foundation Trust.

George H. Reavis (1883-1970) entered the education profession after graduating from Warrensburg Missouri State Teachers College in 1906 and the University of Missouri in 1911. He went on to earn an M.A. and a Ph.D. at Columbia University. Dr. Reavis served as assistant superintendent of schools in Maryland and dean of the College of Arts and Sciences and the School of Education at the University of Pittsburgh. In 1929 he was appointed director of instruction for the Ohio State Department of Education. But it was as assistant superintendent for curriculum and instruction in the Cincinnati public schools (1939-48) that he rose to national prominence.

Dr. Reavis' dream for the Educational Foundation was to make it possible for seasoned educators to write and publish the wisdom they had acquired over a lifetime of professional activity. He wanted educators and the general public to "better understand (1) the nature of the educative process and (2) the relation of education to human welfare."

The Phi Delta Kappa fastbacks were begun in 1972. These publications, along with monographs and books on a wide range of topics related to education, are the realization of that dream.